4.13 Temporary Stream Crossings

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Definition

A temporary structure installed across a flowing stream or water course for use by construction equipment.

Purpose

Temporary stream crossings are used to protect streams from damage and erosion.

Conditions

Temporary stream crossing may include bridges, round pipes, or pipe arches. This standard does not apply to streams with drainage areas greater than 1 square mile. Very small streams may be crossed using protected fords such as rock riprap. Installation may be subject to state regulations.

Design Criteria

Figure 4.13.1 shows installation requirements for temporary stream crossings.

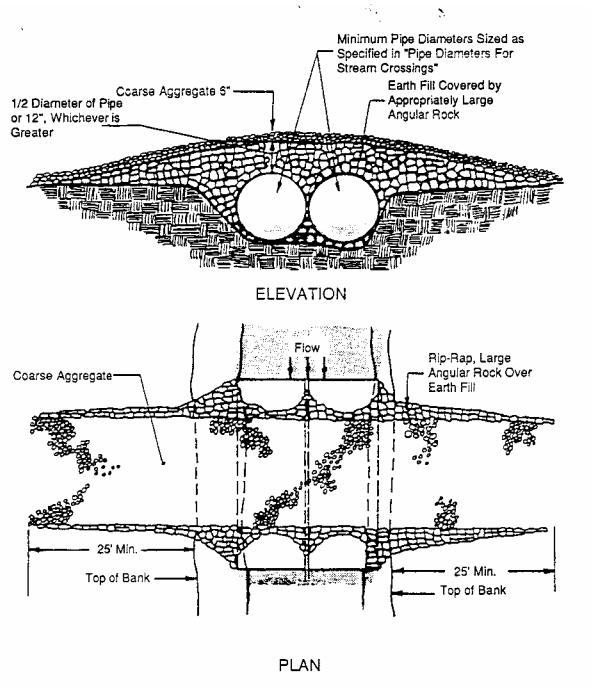

Figure 4.13.1 Temporary Stream Crossing Installation Requirements

Size

The structure shall be large enough to convey the full bank flow of the stream without appreciably altering the stream flow characteristic. Pipe openings may be obtained from Table 4.13.1.

TABLE 4.13.1

Pipe Diameters for Stream Crossings*

Drainage Area (acres)	Average Slope of Watershed			
	1%	4%	8%	16%
1-25	24	24	30	30
26-50	24	30	36	36
51-100	30	36	42	48
101-150	30	42	48	48
151-200	36	42	48	54
201-250	36	48	54	54
251-300	36	48	54	60
301-350	42	48	60	60
351-400	42	54	60	60
401-450	42	54	60	72
451-500	42	54	60	72
501-550	48	60	60	72
551-600	48	60	60	72
601-640	48	60	72	72

*Assumptions for determining the table: USDA-NRCS Peak Discharge Method CN = 65; rainfall depth = 3.7 inches for 2-year frequency. Pipe diameters shown in the table are in inches.

Overflow Protection

Structures shall be protected from washout during periods of peak discharges by diverting water around the structures. Methods to be considered for washout protection may include elevation of bridges above adjacent flood plain lands, crowning of fills over pipes, or by the use of diversions, dikes, or island type structures. Structures shall be designed to withstand flows from a 10-year, 24-hour frequency storm or the storm specified by governing code or ordinance.

Construction Specifications

1. Clearing and excavation of the streambed and banks shall be kept to a minimum.

2. The structure shall be removed as soon as it is no longer necessary for project construction.

3. Upon removal of the structure, the stream shall immediately be reshaped to its original cross section and properly stabilized.

Maintenance

The structure shall be inspected after every rainfall and at least once a week, whether it has rained or not, and all damages repaired immediately.